Complete Summary

GUIDELINE TITLE

Knee & leg (acute & chronic).

BIBLIOGRAPHIC SOURCE(S)

Work Loss Data Institute. Knee & leg (acute & chronic). Corpus Christi (TX): Work Loss Data Institute; 2005. 190 p. [188 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Work Loss Data Institute. Knee and leg. Corpus Christi (TX): Work Loss Data Institute; 2005. 141 p.

** REGULATORY ALERT **

FDA WARNING/REGULATORY ALERT

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory information has been released.

On April 7, 2005, the U.S. Food and Drug Administration (FDA) asked manufacturers of non-prescription (over the counter [OTC]) non-steroidal anti-inflammatory drugs (NSAIDs) to revise their labeling to include more specific information about potential gastrointestinal (GI) and cardiovascular (CV) risks, and information to assist consumers in the safe use of the drugs. See the FDA Web site for more information.

Subsequently, on June 15, 2005, the FDA requested that sponsors of all NSAIDs make labeling changes to their products. FDA recommended proposed labeling for both the prescription and OTC NSAIDs and a medication guide for the entire class of prescription products. See the FDA Web site for more information.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Work-related knee and leg ailments, including anterior cruciate ligament (ACL) tears, collateral ligament tears, meniscus tears, osteochondral defects, and patellofemoral syndrome

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Treatment

CLINICAL SPECIALTY

Family Practice
Internal Medicine
Orthopedic Surgery
Physical Medicine and Rehabilitation

INTENDED USERS

Advanced Practice Nurses
Health Care Providers
Health Plans
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

To offer evidence-based step-by-step decision protocols for the assessment and treatment of workers' compensation conditions

TARGET POPULATION

Workers with knee and leg ailments

INTERVENTIONS AND PRACTICES CONSIDERED

The following interventions/procedures were considered and recommended as indicated in the original guideline document:

1. Anterior cruciate ligament (ACL) repair

2. ACL diagnostic tests (pivot shift test and Lachman test)
3. Acupuncture
4. Bone-growth stimulators
5. Cetylated fatty acids (CFA) topical cream
6. Chondroplasty
7. Cold/heat packs
8. Continuous passive motion (CPM) combined with physical therapy
9. Corticosteroid injections
10. Diagnostic arthroscopy
11. Diagnostic ultrasound
12. Exercise
13. Glucosamine/Chondroitin
14. Hyaluronic acid injections (Synvisc)
15. Knee brace
16. Knee joint replacement
17. Lateral retinacular release
18. Magnetic resonance imaging (MRI)
19. Meniscal allograft transplantation
20. Meniscectomy
21. Occupational and Physical therapy
22. Osteochondral autograft transplant system (OATS)
23. Pharmacotherapy (acetaminophen and non-steroidal anti-inflammatory drugs [NSAIDs])
24. Prostheses (artificial limb)
25. Radiography
26. Return to work
27. Static progressive stretch (SPS) therapy (Dynasplint)
28. Transcutaneous electrical neurostimulation (TENS)
29. Ultrasound fracture healing (bone-growth stimulators)
30. Walking aids (canes, crutches, braces, orthoses, and walkers)

The following interventions/procedures are under study and are not specifically recommended:

1. Activity restrictions/Work modifications
2. ACL injury rehabilitation
3. Continuous-flow cryotherapy
4. Deep transverse friction massage (DTFM)
5. Interferential current therapy (IFC)
6. Lateral pull test and patellar tilt test
7. Microprocessor-controlled knee prostheses
8. Non-surgical intervention for patellofemoral pain syndrome (PFPS)
9. Patient education
10. Posterior cruciate ligament (PCL) repair
11. Post-op ambulatory infusion pumps (local anesthetic)
12. Prolotherapy
13. Pulsed magnetic field therapy
14. Stretching and flexibility
15. Therapeutic knee splint

The following interventions were considered, but are not recommended:

1. Autologous cartilage implantation (ACI)
2. Electromyographic biofeedback treatment
3. Immobilization
4. Low level laser therapy (LLLT)
5. Magnet therapy
6. Manipulation (chiropractic)
7. Single photon emission computed tomography (SPECT)
8. Therapeutic ultrasound

MAJOR OUTCOMES CONSIDERED

Effectiveness of treatment in relieving pain and improving function

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Ranking by quality within type of evidence:

a. High Quality
b. Medium Quality
c. Low Quality

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Not stated

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not applicable

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Initial Diagnosis

Knee ailments are among the ten most common causes of reported work-related complaints and workers' compensation claims. Initially, the practitioner should make sure that there are no indications of a potentially serious disease or condition (red flags), the presence of which would require that the patient be referred immediately to a specialist. In the absence of such red flags, the occupational provider can safely manage the healing process.

Initial Evaluation

First visit: with Primary Care Physician MD/DO (100%)

- Check for serious underlying conditions often indicated by deformity or bone crepitation (fractures); displaced patella, tibia, or fibula (dislocation); severe pain with motion; infection; additional pain in the back or hip; excessive swelling; nontender mass (possibly indicating tumor); or neurovascular symptoms such as pale, cold skin; painless swelling; and/or paralysis.
- Determine the incident or incidents that caused the complaint especially torsion, fixed foot "pop", external lateral force, or forward force with abrupt halt in gait.
- Determine whether the problem is acute, subacute, chronic, or of insidious onset.
- Determine the severity and specific anatomic location of the pain.
- Describe location and severity of pain.

- Assess the ability of the patient to lift and carry weight, from no to full lifting ability.
- Assess the ability to climb stairs and hills and walk on uneven ground.
- Determine any present medication.
- Determine any previous medical history, history of systemic disease, or history of previous knee injury, discomfort, or related disability.
- Investigate non-industrial reasons that commonly exacerbate knee complaints (e.g., recreational sports or other exercise that aggravates the knee, degenerative disorders, and past acute injury).

Presumptive Diagnosis

- Observe the patient's walk and stance for abnormalities, including swelling, deformity, discoloration, inability to extend, and difficulty walking.
- Examine the knee in an extended position for tenderness and range of motion.
- Check for ligament stability while applying pressure with the joint slightly flexed.
- Pull the tibia forward to examine the knee at 30 degrees (Lachman test) and 90 degrees (Drawer test). Problems with both flexion and extension at once could indicate the need for surgery.
- Aspiration can be used on initial atraumatic effusions but only if there is no sign of infection.
- Anterior knee pain, popping and clicking, and possible cartilage loss (shown through magnetic resonance imaging [MRI]) are indicators of patellofemoral syndrome.
- Other anterior knee pains, along with tenderness over the patellar tendon, could be signs of patellar tendonitis.
- Swelling over the tibial tubercle could indicate Osgood-Schlatter disease, a congenital condition.
- Prepatellar bursitis and contusion/periostitis could be caused by direct force, prepatellar bursitis by repetitive friction force.
- Unexplained knee pain, semi-locking, catching, and swelling could be patellofemoral instability, which is often mistaken for a ligament injury. Patellofemoral instability is successfully treated with physical therapy.
- Neurologic condition should be assessed, especially in regard to evidence of lumbar disk disease with possible radiation to the knee.
- Immediate referral is recommended for patients with neurologic symptoms, infections, tumor, or deformity.

Initial Therapy

The first step is to reduce pain and make the patient feel comfortable, usually with nonprescription analgesics or prescribed pharmaceuticals if necessary. At-home exercises, such as bicycling and straight leg lifting, or other retraining and weight-bearing activities may aid in rehabilitation, although a physical therapist may be necessary depending on patient motivation and degree of pain. Exercise and movement have been shown to be more beneficial than total rest, but care must be taken not to overload the knee during weight bearing exercises.

Imaging

If a fracture is considered, patients should have radiographs if the Ottawa criteria are met. Among the 5 decision rules for deciding when to use plain films in knee fractures, the Ottawa knee rules (injury due to trauma and age >55 years, tenderness at the head of the fibula or the patella, inability to bear weight for 4 steps, or inability to flex the knee to 90 degrees) have the strongest supporting evidence. Diagnostic performance of magnetic resonance imaging is recommended for the menisci and cruciate ligaments of the knee.

Surgery

Immediate emergency surgery is usually unnecessary with knee injuries unless there is a need to drain acute effusions. Otherwise, most knee problems are greatly improved with physical methods alone. Only when exercise programs are unable to increase strength and range of motion in the knee after more than a month should surgery be considered, and even then it may not be necessary. Surgery may be considered in the following cases:

- Anterior Cruciate Ligament (ACL) Tears: The decision on whether or not to surgically repair an ACL tear should take into account the patient's work and life needs. For those whose life does not include active use or load of the knee, surgery may be unnecessary. The rehabilitation process following surgery involves six months of very intense therapy, so non-surgical recovery should be allowed to occur as much as possible before any surgery takes place. Confirmation of a complete tear in the ligament through MRI findings, clear signs of instability confirmed through the Lachman, drawer, and pivot tests, and a history of frequent falls or giving way are consistent with this condition.

Official Disability Guidelines (ODG) Return-to-Work Pathways

Severe (tear), ACL repair, sedentary/modified work: 35 days

Severe (tear), ACL repair, manual/standing work: 180 days

(See ODG Capabilities & Activity Modifications for Restricted Work under "Work" in the Procedure Summary in the original guideline document)

- Collateral Ligament Tears: Surgery is usually unnecessary; healing often occurs with rehabilitative exercises alone.
- Meniscus Tears: Patients with meniscus tears that are not severely limiting or progressive may not need surgical attention. In patients younger than 35, arthroscopic meniscal repair can preserve meniscal function, although the recovery time is longer compared to partial meniscectomy. Arthroscopy and meniscal surgery may not be as beneficial for older patients who are exhibiting signs of degenerative changes, possibly indicating osteoarthritis.

ODG Return-To-Work Pathways

Without surgery, clerical/modified work: 0-2 days

Without surgery, manual/standing work: 21 days

With arthroscopy, clerical/modified work: 14 days

With arthroscopy, manual/standing work: 42 days

With arthrotomy, clerical/modified work: 28 days

With arthrotomy, manual/standing work: 56 days

With arthrotomy, heavy manual/standing work: 84 days

- Osteochondral Defects: Studies are still being done to test the effectiveness of osteochondral autograft transplant system (OATS) procedures for osteochondral defects. Patients under 40 years old with active lifestyles may benefit from OATS, and the procedure may delay the development of osteoarthritis, but the procedure is not recommended until further studies are completed.
- Patellofemoral Syndrome: While commonly treated with arthroscopic patellar shaving, this procedure is not proven in terms of long-term improvement. In cases of severe patellar degeneration, surgery is usually not helpful. For patients with rheumatoid conditions, patellectomy and patellar replacements are sometimes performed on active patients. Other possible surgeries for patellofemoral syndrome are lateral arthroscopic release and surgical realignment of the extensor mechanism.

ODG Return-To-Work Pathways

Arthroscopy, clerical/modified work: 7-10 days

Arthroscopy, manual work: 28 days

Arthroscopy, debridement of cartilage, clerical/modified work: 7-14 days

Arthroscopy, debridement of cartilage, manual work: 30 days

Arthrotomy, clerical/modified work: 21 days

Arthrotomy, manual work: 49 days

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

During the comprehensive medical literature review, preference was given to high quality systematic reviews, meta-analyses, and clinical trials over the past ten years, plus existing nationally recognized treatment guidelines from the leading specialty societies.

The type of evidence associated with each recommended or considered intervention or procedure is ranked in the guideline's annotated reference summaries.

Ranking by Type of Evidence:

1. Systematic Review/Meta-Analysis
2. Controlled Trial-Randomized (RCT) or Controlled
3. Cohort Study-Prospective or Retrospective
4. Case Control Series
5. Unstructured Review
6. Nationally Recognized Treatment Guideline (from www.guideline.gov)
7. State Treatment Guideline
8. Foreign Treatment Guideline
9. Textbook
10. Conference Proceedings/Presentation Slides

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

These guidelines unite evidence-based protocols for medical treatment with normative expectations for disability duration. They also bridge the interests of the many professional groups involved in diagnosing and treating work-related knee ailments.

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2003 (revised 2005)

GUIDELINE DEVELOPER(S)

Work Loss Data Institute - Public For Profit Organization

SOURCE(S) OF FUNDING

Not stated

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

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GUIDELINE AVAILABILITY

Electronic copies: Available to subscribers from the Work Loss Data Institute Web site.

Print copies: Available from the Work Loss Data Institute, 169 Saxony Road, Suite 210, Encinitas, CA 92024; Phone: 800-488-5548, 760-753-9992, Fax: 760-753-9995; www.worklossdata.com.

AVAILABILITY OF COMPANION DOCUMENTS

Background information on the development of the Official Disability Guidelines of the Work Loss Data Institute is available from the Work Loss Data Institute Web site.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on February 2, 2004. The information was verified by the guideline developer on February 13, 2004. This NGC summary was updated by ECRI on March 28, 2005, and on January 12, 2006.

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